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6/12/1974

FINAL ENGINEERING REPORT

ON

THE ST. FRANCOIS COUNTY LANDFILL

40111325



SUPERFUND RECORDS

SEIBERLING ENGINEERING & SURVEYING CO.

Bonne Terre, Missouri

June 12, 1974

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FINAL ENGINEERING REPORT

ON

THE ST. FRANCOIS COUNTY LANDFILL

FOREWARD: This Report is both an addition and a continuation of the Preliminary Engineering Report on the St. Francois County Landfill dated June 28, 1973.

The Addition is the plans and specifications for the Demolition Landfill which is located on the West of the County Landfill Tract (see Plate B).

The Continuation part is the Contour Map, Typical Trench Sections, and East-West Cross Sections of Landfill Tract plates plus additional plans, details and information ~~not~~ not included in the said Preliminary Engineering Report.

In my letter of August 6, 1973, relative to the Comments on my Preliminary Engineering Report, I explained that the former Desloge City Dump is on an entirely different tract of land a few hundred feet West of the West property line of the St. Francois County Landfill Tract and was operated by the City of Desloge. The St. Francois County Landfill Organization had no part in its operations or in its closing.

The completion of this report was delayed over an extended period of time for the purpose of gathering additional data and for the decision as to whether a Demolition Landfill was to be required, based on actual operating data. To us, a major slime pond is quite unique and offers unusual problems not found in a sanitary landfill operated in natural or undisturbed soil. Actual operations often proved theory and procedures used in normal landfills to be of questionable value.

Initially, the 503.82 acre abandoned slime pond was donated by the St. Joe Minerals Corporation to St. Francois County for a solid waste disposal area. A county non-profit organization was formed to develop and operate a Sanitary Landfill for the entire county since it was more or less centrally located. The various cities and towns were contacted and a fee estimated to be adequate for operation including personnel, equipment including maintenance and repairs and replacements, supplies, supervision, engineering and other costs. Citizens of those cities and towns which had contracted with the County Landfill Operations, were permitted to deliver and have their trash disposed of free. All others would be charged on a fixed rate based on type of vehicle load.

Each contributing city either had its own garbage trucks or had contracted with a private organization to pick up and deliver its garbage weekly. Many families residing out of said contributing cities arranged with the private organization to pick up and haul their wastes. Others decided to haul their own

trash either to the Landfill and pay the regular fee. Others continue to dump their trash on the road right-of-ways or on somebody else's land as they have in the past. Only a rigid and determined enforcement of existing laws including prosecution and stiff fines will materially reduce this deplorable practice.

Since the said preliminary Engineering Report was drafted, cities from adjoining counties have begun to use these facilities until such time that their own counties can open and operate a sanitary landfill. Operations have indicated that a slime pond type of landfill is capable of handling a much greater volume of solid wastes than originally anticipated. This is due principally to two factors, one of which is that the fine chat or rock dust can be handled much easier than natural soil. The second factor is that the walls of the trenches stand much better than anticipated, thus enabling the operator to dig and utilize a much deeper and larger cell than initially conceived. The factors involved in forming a slime pond, one of which is that the fine slimes of minus 200 or finer have formed a practically impervious zone between the coarser chats and the natural floor and sides of the valley in which it was formed. The danger of any leachate escaping to the natural terrain thru the sides, bottom or dam is practically nil.

The surface of the existing slime pond (which was abandoned some 20 years ago when the Desloge Mill shut down) is perhaps 50 feet above river level at its lowest point, and so is safe from any flooding. A flash flood on its surface naturally would involve some run-off. The gentle slopes do not encourage fast moving water and so do not tend to cut ditches which could cut into a covered cell. Since the finished top or surface of a cell is a few feet above the normal surface of the undisturbed slimes and the grades are even flatter, we do not anticipate any storm waters cutting into a cell and then running off down the gentle slopes to the existing pond in the Southwest corner of the Landfill Tract. From this pond, any contaminated water could flow to the drain tower and thence thru a tunnel to the natural drain about 100 feet South of the South property line of the Landfill Tract. Thence on toward Big River about 1/2 mile toward the Northwest. Thus, care must be exercised that no drainage channel runs across a cell.

Wind blown papers are a problem at any landfill and especially at a slime pond where there are no trees to break the wind. The writer observed operations on a day where the gusts of wind exceeded an estimated 30 miles per hour. It was noted that wind-blown papers cleared a bank over 20 feet high. It was also noted that the trash from the regular garbage truck, all of which was bagged in plastic bags, had practically no wind-blown papers. Trash being dumped from a truck which was not enclosed in plastic bags lost most of its papers to the

high wind. Thus, it is evident that all wastes from the home or office should be enclosed in plastic or similiar bags. This practice would eliminate a very large portion of the paper which will blow over practically any portable chicken wire barrier that one may devise. For gentle winds, a 5 foot portable barrier on the down wind side is adequate.

After several months of study, it was decided that a Demolition Landfill should be operated in conjunction with the regular sanitary landfill mostly for the sake of efficiency and convenience of operations. It will be operated by the same personnel and is located on the West side of Area 1 of the Landfill Tract (see Map of County Landfill Site, scale 1" = 500') consisting of 70.69 acres in U. S. Surbey N° 3176 and 11.10 acres in U. S. Survey N° 870). The same equipment will be available for both operations.

During the winter months, no problem was encountered in landfill operation other than that the users, particularly the individual hauling his own wastes, simply stayed home on exceptionally slick days. The access roads remained passable and the equipment functioned properly.

It was found that the individual cell could be cut much deeper and longer than first anticipated. The maximum depth is mostly limited by the character of the chat or slime. In a few places, soft spots were encountered where the heavy equipment had a tendency to start settling or sinking. The operators easily recognize such spots and avoid them. Apparently, a body of unusually fine slimes was deposited in the chat field operations. It apparently was so fine that it retained much of its moisture and has a somewhat dough-like characteristic. A heavy piece of equipment could settle too deep in such a spot, not be able to move out under its own power and have to be dragged out with a cable hooked to a dozer. These soft spots are not at the lowest elevation, and so are not due to encountering the water table. Some thought has been given to stock piling this material with a drag line and using it as cover material where needed. It can be mixed with the normal slimes. It has been found that the covered cell has much better bearing power than the undisturbed slime surface. The writer would hesitate to attempt to drive his personal auto over the slime field since it would loose traction like in soft sand. However, there is no problem in driving anywhere over the covered cell due to the compaction. By leaving more slope on the sides of a cell to avoid slumping, it would appear feasible to excavate the cell to a depth of 25 feet or more in normal slimes. Its length would be limited by the drainage system but could exceed 300 feet. Its width could be up to 50 feet at the bottom. This is possible, for unlike the normal landfill where the sides and bottom are nearly impervious, the compacted slimes of the cover material appear to offer a better barrier to water than the sides and

bottom. Thus, if space were at a premium in this landfill area, it would appear to be feasible to stock pile slimes on top of the present covered cells with a clamshell, and add a second cell on top of the first. However, this would be a much more expensive operation and the space is adequate for many years of operation. It is believed that as more and more material, such as paper, rubber, glass, various metals and the like are recycled and also that it appears that efforts being made to utilize much waste material as a source of energy by using it as a fuel are showing promise, the needs and volume of our landfill operations could be greatly reduced in another ten years or less.

SANITARY LANDFILL RULES AND REGULATIONS

The Preliminary Engineering covered much of the requirements of the early drafted solid Waste Rules and Regulations. Since it was submitted in June, 1973, the Division of Health of Missouri has issued a number of rough drafts of their proposed rules and regulations which now have been finalized into the Missouri Solid Waste Rules and Regulations. This report is intended to supplement the said preliminary engineering report to meet the requirements of the finalized rules and regulations so that the required operating permit may be requested. While, technically the landfill has been operating without the required operating permit, an effort has been made to conform with the other rules and regulations. The operating personnel have become well trained and experienced. Other cities and communities have begun to utilize these facilities.

For the sake of simplicity, this report will follow the paragraph numbering system of the Division of Health Final Rules and Regulations.

2.0.0 SCOPE

2.0.1 It is the intention of the management of this landfill operation to conform with and meet the requirements of the State Sanitary Rules and Regulations. It is understood that changes may be required in design and in operating procedure as the condition warrants.

The word slimes is misleading to one not familiar with mining and milling operations. In this report it shall mean dry, finely ground limestone ranging from about 20 mesh to minus 200 mesh in grain size.

2.1.0 SOLID WASTE ACCEPTED

All solid waste shall be accepted at this landfill operation except the following:

1. Auto, truck and trailer bodies.

2. Animals larger than a dog.
3. Hazardous wastes, bulk liquids and semisolids.
4. Sludges containing free moisture, highly flammable or volatile substances.
5. Unexpended pesticide containers and pesticides.
6. Animal manure, septic tank pumpings, raw sewage sludge, and industrial process sludge.
7. Radioactive materials and explosives.

The operator shall determine in which landfill a load shall be dumped or if it shall be refused due to the presence of any of the above listed non-acceptable wastes.

For small loads such as passenger cars, a dump truck will be backed up below a ramp to accept such loads a short distance inside the entrance gate.

The body of a large dog and similar sized animals will be placed in the cell in a deeper pit at the toe of the garbage layer and covered with 4 feet of slimes. This same procedure will be used, at the operator's discretion, for other acceptable wastes requiring special handling, thus assuring that such material will end up buried several feet below the final cover.

2.1.3 OPERATIONS

1. The scheduled days and hours of operation shall be clearly posted at the main entrance.
2. Rates per load and a list of the non-accepted materials shall be clearly posted at the main entrance.
3. The operator or his representative will be at the office located at the main entrance to personally check each load, collect fees and fill out forms.
4. The operator's decision shall be final in all cases. He shall refuse or accept the load, direct its disposition and report any attempted violations of the landfill regulations and unusual incidences.
5. The operator shall prevent any burning or scavenging.
6. The operator shall control authorized salvaging for metal and other valuable materials.
7. The operator shall be responsible for maintaining necessary forms and records and keep them properly filed and up-to-date.
8. When directed to do so by Division of Health Officials, the Operator shall catch samples of any run-off or other waters at the overflow tower

and process them as directed.

9. The Operator shall employ competent personnel and see that they are properly trained and carry-out properly the routine sanitary landfill techniques of spreading the accepted solid wastes in approximately 2 foot layers, fully compacting it, and then covering it with a 6 inch layer of the slimes at the end of each operating day.

10. Bulky materials such as furniture and appliances will be routed to the demolition landfill where any salvageable parts will be removed. Then it will be crushed on solid ground with the dozer before moved into the working face.

11. Small dead animals shall be placed on the working face with other solid wastes and covered immediately with solid wastes or slimes. Larger acceptable dead animals have already been mentioned above.

12. Dry water treatment plant sludges and dry digested waste water treatment plant sludges, if in acceptable quantities, shall be placed on the workings face along with the municipal solid wastes and covered with slimes or the solid wastes.

13. Incinerator and air pollution control residues shall be incorporated into the working face and covered at such intervals as necessary to prevent them from becoming airborne.

2.2.0 SOLID WASTES EXCLUDED.

Those solid wastes not to be accepted at this landfill operation have already been listed under 2.1.0 above. Should there be something not listed above which the Operator deems dangerous to the operating personnel along chemical or biological lines, he shall refuse to accept it. No special waste handling facilities are planned at this time.

The general list of wastes not accepted is prominently displayed at the site entrance.

2.3.0 SITE SELECTION.

The site development plans initially were covered in the Preliminary Engineering Report which included the Land Use Map and the Property Map.

For the Contour Map, see Plate B attached to this report. It shows the general site location for both the Sanitary Landfill and the Demolition Landfill including the road system and general drainage system.

For type section of a cell see Plate A attached. Each individual cell will vary in length, width, depth and slope of the face and sides. This is due to the characteristics of the slimes and how they were deposited initially. In this report the word chat is sometimes used by my associate, Mr. Duffy. In all cases, it refers to slimes which are finely ground limestone and dolomite rock with some shale. The Slime Field was built up by pumping these slimes suspended in water from the Desloge Mill, thru large pipes where they were discharged at the upper end of the growing slime field. Here, the slime settled out of the solution and the water flowed by gravity down to the pond in the lowest spot. Here, the water stood while the extremely fine material settled out and the very top layer of practically clear water was decanted off at the control tower. The coarsest slimes probably would pass thru a 20 mesh screen.

The Cat Pile located East of this slime field was built up of much coarser ground rock ranging from about 4" mesh to 20 mesh and deposited by a belt on top of a pile. In the more modern area, this became the coarse material from the classifier. In any event, the slimes from the flotation machinery were deposited in gently sloping "Fields", while the chats were deposited in huge chat piles.

Our landfill operation is in the slime field, where only the dam may have contained some coarse chat for body.

The ultimate land use of this landfill area will probably be a recreational type park. It is bound on the Northwest, North and Northeast by Big River. Across Big River presently are farms, pastures and woodlands. Should Terre Du Lac continue expanding, it may be developed along the North side of the river. In any event, this area should lend itself to a very attractive recreational area. There is inadequate soil in this region to consider covering it deep enough for agricultural purposes. Several years will pass before this filled area would be available for other uses, hence it seems more appropriate to wait until that time before making definite plans. Until that time, grasses will grow on the final cover, and it will be suitable for grazing. Bike riders must be kept off, for they destroy the vegetation which will be difficult to grow for some time.

Due to the porosity of the slimes in their dry state, it is believed that all organic material will be decomposed in much less time than in the normal soil-covered landfill. Thus in a few years, this area possibly would be suitable for a residential area. Wider footings would be required for the homes. The new U. S. Highway No. 67 across the Bonne Terre

Slime Field indicates that no major problem would be encountered in construction.

2.4.0 DESIGN

See Plates A, B and C attached for the general layout and design of this Sanitary Landfill. As previously mentioned, the size of the individual cell will vary according to the type of slimes encountered. Where the plastic or doughy-like spots are encountered, the cell will probably be terminated.

2.5.0 WATER QUALITY

As previously stated in the Preliminary Engineering Report, this slime field acts like a trapped water table. It resembles our ancient dry lakes out in the California Deserts in some respects. In any event, its sides, bottom and dam are impervious. Hence, the only possible danger to our surface waters, namely to Big River, would be due to a cloud-burst. Here, the storm waters would run-off and overflow the small pond and then run thru the control or drain tower to Big River about a half-mile away. However, due to the compaction of the cell cover and the gentle slopes, it is believed that the cloud-burst waters would not cut thru the final cover. The open cells are too deep for the storm waters to fill, and the berms around them would divert it away. Thus, this landfill would not be considered a hazard to outside waters of the State.

1. There are no projected uses for the ground waters trapped inside the slime field.

2. The maximum elevation of the water-table would be the pond water level of 775. However, unlike normal water-tables, that of this slime field is not uniform. In any event, no cell will encounter the water table for the doughy-like slimes will prevent it from being developed.

3. The possibility of a cloud-burst and its possible effect have already been mentioned above.

4. This sanitary landfill, due to its impervious bottom and sides will have no effect on our water resources in this district. Here, we depend on deep wells into the La Motte Sand which is located about 300 feet below the surface of the lands surrounding the slime pond. When required, a sampling station will be located at the cont

tower or drain tower shown at the South end of the pond in the Southwest corner of the tract (see Plate "B" attached). The pond will act as an observation well since its condition clearly reflects any flooding on the slime field.

6. This slime field rests in a former valley, the surface being about middle BonneTerre Formation. The soil is mostly red clay with an average percolation rate varying from 1" in 30 to 60 minutes. Some 300 feet of BonneTerre limes cover the La Motte Sand which is our main source of potable water. Some small wells take water from zones, fractures and channels in the BonneTerre limes. Due to the impervious nature of the bottom and sides of the slime field, the writer would venture that a landfill operation in said slime field will have no effect on the water quality of the area outside of its bounds.

7. The proposed gentle slopes and excellent compaction of the cell final cover is believed adequate for even the 100 year rainfall frequency- See Plates C-1, 2 and 3.

8. Due to the characteristics of the slimes, no leachate generation is anticipated. Wet slimes compact and the extreme fines fill the voids of the slightly coarser material until we have a practically impervious layer.

As previously mentioned, the lowest point of the dam is at least 50 feet above the waters of Big River. Since the dam has already stood for more than 30 years, no effect is anticipated from flood waters of the river.

The surface of the slime field was naturally a gentle slope. The grading of the surface of the cells will be even more broad and gentle, but will afford adequate run-off. Due to said grading and to the compaction of the surface of the cell, no contact with either ground or surface water is anticipated.

2.6.0 AIR QUALITY

Unfortunately, it is the nature of the fine slimes of any slime field to blow in a strong wind. It is similar to the sandstorms of our Western deserts except that it is finer and does not pit the finish of autos, etc. The St. Joe Minerals Corp. has spent many thousands of dollars on various programs to control the slimes blowing from old slime fields and also from the chat piles. Various types of grasses have been planted directly on the surface of the slimes with some success.

Many years ago, National Lead Company covered one of their slime ponds East of the City of Desloge with about a foot of clay soil. Grass, weeds and cedars soon covered it and today we have no blowing dust or slimes from it. Hence, it is believed that the proposed clay final cover of our cells will be adequate for hundreds of years. Bike riders and similar hazards must be controlled if this soil is to remain undisturbed, for on the National fields, their paths clear off the vegetation and cut a path along which storm waters run and eventually cut thru the cover. Channeled water moving rapidly will cut deeply thru even compacted slimes and chats.

No burning of any wastes in this landfill will be permitted.

2.7.0 GAS CONTROL

Due to the porous nature of the dry slimes, any fumes generated in a cell will percolate to the surface. Due to the fact that there are no homes within several hundred yards toward the East and North, no possible danger can be foreseen from decomposition gases. Due to the broad, gentle slopes, any such gases will be dissipated into the air instead of collecting in a pocket. The Writer could not detect any objectionable odors while standing downwind from a cell about a year old.

2.8.0 VECTORS

The wide open slime fields alone are a major deterrent toward the movement of any small animal across its surface due to birds of prey, etc. The slimes are unsuitable for dens of anykind.

Due to the daily cover, there is little to attract anything. The Writer used to dump at the former Desloge City Dump which was located a few hundred feet West of the slime field. Here, rats, flies and everything attracted by garbage, were extremely bad. The Writer also has dumped at the new landfill on the slime field and very few flies were noted. No rats have been noted. The daily cover of dry slimes is the answer.

Should vectors appear, a system of traps and poisons will be initiated under careful control of the Operator.

2.9.0 AESTHETICS

The requirement to bag your trash in a plastic bag before they will pick it up, is the most effective method of litter control, and it is practiced by allof the professional trash haulers. A similar requirement of the individuals delivering their own trash would be equally effective. Unfortunately until such time that this and all other Counties will strictly enforce the no dumping laws, a strict requirement of, "All trash and wastes must be bagged to be accepted at this landfill" would only drive the private dumpers to dump on country roads and vacant lands. While outside of the limits of the professional engineering, the Writer feels that as long as we have elected county officials such as prosecuting attorneys, judges and sheriffs, we will have poor law enforcement. The sheriff must arrest, the prosecuting attorney must prosecute without delay (meaning within a few days at most), and the judge must administer a penalty stiff enough to make it easier to comply with the law than to evade it.

2.9.3 LITTER CONTROL REQUIREMENTS

1. Encourage all users to bag their trash.
2. Use portable litter fences on downwind side of working face and remove any litter caught, daily.
3. Immediately cover wastes which can be easily moved by the wind.
4. Authorized salvage operations will be conducted only at the demolition landfill where such material should be loaded and hauled away daily.
5. No scavenging will be permitted at either landfill.

2.10.0 COVER MATERIAL

The daily, intermediate and first layer of the final cover is the dry slime. Its composition already has been covered as well as its qualities. As far as quantities go, there are many thousands of tons of it available on the site. This cover material not only is the best for all of the requirements under 2.10.1, but it is also the easiest, most abundant and cheapest to handle. The final or top coat of the final cover is to be clay which can be obtained on a ridge along the

West side of the ~~ect~~. The chat alone will not grow vegetation in a satisfactory manner, and without vegetation and a clay cap, it will blow.

See Plate C-1, 2 and 3, the final grades will be very gentle and the drains broad and hence shallow. About a 1% grade would be ideal, but up to 5% should not encourage washing and channel-cutting.

As previously mentioned, the dry slimes do not offer much encouragement along the lines of growing vegetation. Since it consists of practically powdered rock dust, there is little moisture or food for plants. Irrigation is not the answer, though it worked in Imperial Valley where there was just plain desert sand. In the slime field, only sparse vegetation grows around the pond.

2.10.3 OPERATING PROCEDURES

1. Daily cover consisting of not less than 6" of slimes shall be applied to the compacted waste layer at the end of each operating day.
2. If for any reason the cell will not continue to be operated for an extended period of time (over 60 days), add 12" of compacted slimes to its daily cover.
3. Final cover shall be added when the cell is completed. This shall consist of not less than 12" of compacted slime. Then add a minimum of 12" of compacted clay ^{soil} cap, grade and seed.

2.11.0 COMPACTION

The landfill equipment, maintenance facilities, etc. were covered in the Preliminary Engineering Report. At present, this equipment consists of a John Deere Model JD646 Landfill Compactor, a Caterpillar D-6 Dozer Shovel, and a dump truck. A maintenance and inspection vehicle, a pickup truck, also is used. A dozer can be obtained on short notice as a backup piece of equipment. Both dozer and compactor can operate on a 3:1 grade.

2.11.3 OPERATIONS

1. Spread the solid wastes in layers not more than 2 feet thick on the sloping bottom of the cell.

2. Then compact said layer to its smallest practicable volume (usually about 1/3).
3. Place, spread and compact the cover material.
4. Preventative maintenance on the equipment must be performed daily on operating days.
5. The machine operators must be trained in operating, maintaining and making minor repairs. An operating manual must be available.

2.12.0 SAFETY

This sanitary landfill shall be designed, constructed and operated in a manner that will protect the health and safety of all personnel associated with or affected by the operation.

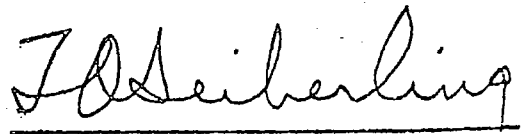
1. Only the main entrance shall be available for use by the public. When the facility is not being operated, this main entrance shall be locked.
2. Should dust become a hazard, arrangements should be made to sprinkle the down-wind area. Operating personnel should be furnished a dust respirator and safety goggles. They should be required to wear a safety helmet (hard hat) and wear safety shoes.
3. No burning shall be permitted. Should a fire start by accident, the fire extinguisher or slimes shall be used to immediately extinguish it. A long handle shovel shall be kept with each piece of equipment especially for throwing slimes on the fire to smother it.
4. A fire extinguisher shall be provided on each piece of solid waste handling equipment.
5. Adequate communications equipment, either a telephone or 2-way radio, shall be kept at the office for any emergency situation.
6. The office, maintenance shed and operating areas shall be kept in a sanitary and litter free condition.
7. Traffic signs shall be provided where necessary to promote an orderly traffic pattern on the facility. The operator also shall direct each vehicle to the proper area. Drivers of manually discharging vehicles should not hinder the operation of mechanically discharging vehicles. No vehicle shall be left unattended near the working face or be parked anywhere where it might obstruct traffic. If a regular user persistently poses a safety hazard, he must be barred from the site.

The Operator shall be responsible for procuring, maintaining and filing records for the County and for the Division of Health. This shall include any required monitoring data. He shall acquire, information on recording and monitoring requirements from the Division of Health.

A. Records shall be maintained covering the following:

1. Major operational problems, complaints and difficulties with users or equipment.
2. Any required records of sampling or analysis which may be requested by the Division of Health or official environmental agencies.
3. Vector control efforts and results.
4. Dust and litter control efforts.
5. Volumes of solid wastes handled on each operating day by cities, communities, and private individuals. Also a record of monies received from the private individuals. The operator shall devise the necessary forms for these records and instruct his personnel in maintaining them.
6. Description, source and volume of any of the special waste materials listed as non-acceptable under Paragraph 2.2.1 above which may have evaded the inspector and got dumped. The individual responsible must be warned and if necessary, prosecuted if he repeats the violation.

- B. Upon closing an area of the sanitary landfill, a detailed description on a licensed surveyor's plat, shall be recorded with the County Recorder. This description shall include general types and locations of wastes, depth of fill, and any leachate or gas control facilities which will have to be continued after closing.


T. O. Seiberling, P.E.
June 12, 1974

LANDFILL RULES AND REGULATIONS

DEMOLITION LANDFILL RULES AND REGULATIONS

This proposed demolition landfill is on the West part of the Landfill Area 1 and will be operated by the same crew using the same equipment as the St. Francois Sanitary Landfill. The Preliminary Engineering Report on the sanitary landfill covers the background, area and general characteristics of both landfills. The Final Report on the sanitary landfill dated June 28, 1973 covers the type of solid waste handled by each and some difference in the rules and regulations and efficiency of both landfills. The chief difference is in the type of solid waste handled by each and some difference in the rules and regulations and efficiency of both landfills. The Chief difference also apply to this Final Report on the Demolition Landfill. Hence, for the sake of simplicity and efficiency, this report will be attached to the sanitary landfill report.

[illegible]

3.3.0 SCOPE

3.0 SCOPE

As mentioned above, the same personnel, equipment, office, maintenance shed both of "doughy" for soft or It is understood that the requirement subsections and that the design operation as the condition

COPIES ACCEPTED

3.1.0 SOLID WASTES ACCEPTED

2. Brush, trees, stumps and other wood wastes.
3. Tires, inert plastics and other nondecomposable solids insoluble in water.
4. Appliances small enough to crush with dozer.

No wastes will be accepted that require special handling. The tree and limb wastes shall be cut in a maximum of 4 foot lengths before delivering to the dump. No wastes that have unacceptable items mixed in with them will be accepted. Such wastes shall be rerouted to the sanitary landfill, if acceptable there.

The routine sanitary landfill techniques of spreading and compacting the solid wastes shall be used as much as practicable in this demolition landfill.

The list of acceptable wastes shall be displayed prominently at the site entrance along with the charges per load.

3.2.0 SOLID WASTES EXCLUDED

All other wastes not listed in 3.1.0 above shall be excluded from this landfill. The inspector at the office shall determine to which landfill each load shall be taken. He will check each load before accepting for either landfill.

Where items not acceptable are covered so that the inspector fails to see them and the load is dumped at this landfill, the customer will be directed to pick them up and deliver to the sanitary landfill. Should he refuse, he should either be barred from further use of either landfill facility or else pay double for all loads in the future, to be based on the decision of the Operator.

Where the customer refuses to pick up and haul non-acceptable items, it will be necessary for the landfill personnel to perform this task.

3.3.0 SITE SELECTION

This part is fully covered in 2.3.0 Site Selection in the Sanitary Landfill Report, all of which applies here.

3.4.0 DESIGN

See 2.4.0 of the Sanitary Landfill Report all of which shall apply here.

3.5.0 WATER QUALITY

See 2.5.0 of the Sanitary Landfill Report all of which applies here. In addition, decomposable solid wastes such as brush and other wood wastes shall be disposed of above the water table in that particular cell.

3.6.0 AIR QUALITY

See 2.6.0 of the Sanitary Landfill Report, all of which applies here.

3.7.0 GAS CONTROL

See 2.7.0 in the Sanitary Landfill Report, all of which applies here.

3.8.0 VECTORS

See 2.8.0 in the Sanitary Landfill Report, all of which applies here.

3.9.0 AESTHETICS

See 2.9.0 in the Sanitary Landfill Report where all except the following applies here:

1. Salvage operations shall be conducted in such a manner as to not detract from the appearance of the landfill site. Salvaged materials shall be removed from the site daily or stored in aesthetically acceptable containers or enclosures.

3.10.0 COVER MATERIAL

1. Solid wastes accepted shall be covered with slimes forming one or more cells at least once every seven calendar days. The thickness of compacted cover shall not be less than twelve inches.
2. Final cover shall be applied to each area or cell as it is completed and shall not be less than two feet thick, consisting of 12" of slimes and a clay cap of 12".

See 2.10.0 in the Sanitary Landfill Report for additional data.

3.11.0 COMPACTION

See 2.11.0 in the Sanitary Landfill Report where all except the following applies here:

1. The solid wastes accepted may be placed, spread and fully compacted daily as received or let accumulate depending on the situation. In no event shall more than 200 cubic yards be accumulated before handling, nor shall the Operator fail to place, spread, compact and cover the material within seven calendar days.

2. No solid waste shall be disposed of in water.

3.12.0 SAFETY

See 2.12.0 in the Sanitary Landfill Report, all of which applies here.

3.13.0 RECORDS

See 2.13.0 in the Sanitary Landfill Report, all of which applies here.



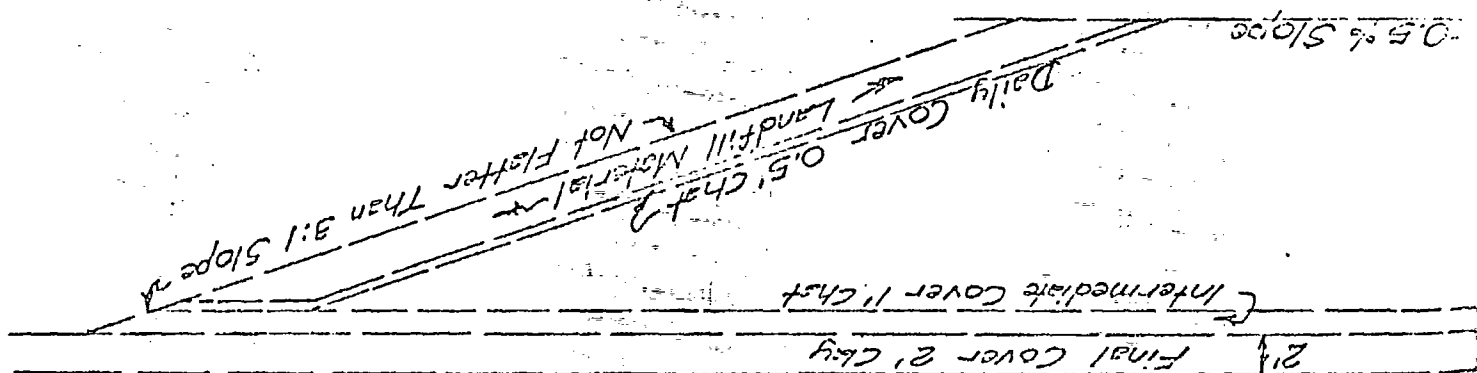
T. O. Seiberling, P.E.

June 12, 1974

McIntosh, PC.

ST. FRANCOIS COUNTY LANDFILL
TYPICAL TRENCH SECTIONS
4-5-74
Walt: H-11

TYPICAL LONGITUDINAL VIEW
OF TRENCH
Scale: 1"=10'



TYPICAL TRENCH SECTION
Scale: 1"=10'

